

## CLAIMS

1. Device for measuring current in a line (5) supplied by a voltage with noise, comprising a shunt (8) mounted in series in the line (5), characterized in that it comprises an amplifier (15) of the signal of the shunt (8), hereinafter called a floating amplifier, and a floating supply means (C1, C2, D1, D2) to supply said amplifier (15) with a voltage that follows the supply voltage of the shunt (8).

2. Device according to claim 1, characterized in that the line (5) is a supply line of an asynchronous triphase electric motor (1), said electric motor (1) being supplied by a chopped voltage, having a power of about 500 watts, and in that the shunt (8) has a value of about 1 mΩ.

3. Device according to any one of claims 1 to 2, characterized in that it comprises a differential amplifier (9) whose inputs are connected on the one hand to an input terminal (12) of the shunt (8), and, on the other hand, to

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Sub  
A1

Sub  
A1  
conc. 5

~~the output (14) of the so-called floating amplifier (15).~~

4. Device according to claim 3, characterized in that the floating amplifier (15) has its inputs connected to the terminals (12, 13) of the shunt (8) and in that the floating supply means (C1, C2, D1, D2) is constituted by a mounting of the double bootstrap type.

5. Device according to claim 4, characterized in that the mounting of the double bootstrap type comprises:

the connection of a terminal of voltage VCC of said floating amplifier (15) to a battery (2) via a diode D1, and the mounting of a condenser C1 between the input terminal (12) of the shunt and the cathode (16) of the diode D1,

the connection of a terminal of voltage GND (or VEE) of the floating amplifier (15) to the ground (10) via a diode D2 and the mounting of a condenser C2 between the input terminal (12) of the shunt and the anode (17) of the diode D2.

6. Device according to claim 5, characterized in that the floating amplifier (15) is supplied at a voltage double the supply voltage of the shunt (8), before chopping.

~~7. Device according to any one of claims 1 to 6,~~

Sub  
A2

sub  
Aa  
conc.

characterized in that it is used in an electrical power  
steering for an automotive vehicle.

5 8. Process for measuring weak current in a line  
(5) supplied by a voltage with noise, characterized in that  
it comprises the step of amplifying the signal of difference  
of potential between the input terminal (12) and output  
terminal (13) of the shunt (8) by an amplifier (15) called a  
floating amplifier, supplied by a voltage which follows the  
supply voltage of the shunt (8).

5 9. Process according to claim 8, characterized in  
that it comprises moreover a step of differential amplifica-  
tion of the difference between, on the one hand, the signal  
of chopped voltage at the input (12) of the shunt (8), and,  
on the other hand, the potential difference at the terminals  
of the shunt (8), amplified by the floating amplifier (15).

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